Diagnosis and Treatment of Obstructive Biliary Tract Disease

THOMAS TAYLOR WHITE has provided in this issue an overview of current methods for diagnosing and treating those diseases that cause obstruction to the flow of bile through the biliary tree. I find it difficult to take issue with what has been written; the author has been all-inclusive in his treatment of the subject. Unfortunately, the reader may be overwhelmed by the sheer bulk of material presented. Furthermore, there is little reduction, integration or resynthesis of the knowledge it provides. My remarks will be directed toward correcting this deficiency by providing a bridge between White's extensive annotation on the work published in this area and contemporary approaches to the treatment of biliary obstruction.

The variety of diagnostic techniques described by White are listed in Table 1. There obviously is no lack of procedures that a jaundiced patient can be subjected to. The history is a good starting point that, when taken with care, will suggest a reasonable working diagnosis. For example, chronic alcoholism, cholestatic drug ingestion, exposure to hepatitis or hepatotoxins and the known presence of gallstones in the gallbladder all have their diagnostic implications. A physical examination usually is nonrevealing other than in establishing the hue of icterus, size of the liver, stigmata of cirrhosis or palpable abdominal mass or tenderness. Nor are laboratory studies specific in differentiating biliary obstruction from other forms of cholestasis. The serum bilirubin determination, with its fractions, helps to distinguish those diseases that present with indirect or direct hyperbilirubinemia (hemolytic anemia, Gilbert's disease). Serum aspartate aminotransferase (formerly, glutamic-oxaloacetic transaminase) when notably elevated identifies primary hepatocellular disease. Serum albumin and prothrombin time (when corrected with vitamin K_1 oxide) determinations provide an index of hepatocellular protein synthesis that may be disturbed in chronic liver disease.

Ultrasonography has evolved as the cheapest, safest and most direct way to determine whether the biliary tree is obstructed. The finding of dilated bile ducts in a jaundiced patient is strong direct evidence of obstruction or congenital enlargement.

TABLE 1.—*Diagnostic Tools in Obstructive Jaundice*

History	Peritoneoscopy
Physical diagnosis	Visceral angiography
Liver profile	Exploratory laparotomy
Ultrasonography	Perioperative cholangiography
Radionuclide scan	Choledochoscopy
Computerized tomography scan	
Percutaneous cholangiography	
Endoscopic cholangiopancreatography	
Aspiration cytology	
Percutaneous biopsy	

The procedure may also show the cause of the obstruction by exposing the presence of gallstones in the gallbladder or a mass in the head of the pancreas. Computerized tomographic (CT) scan may be more reliable for the latter diagnosis but is more expensive and not as generally available as ultrasonography. Furthermore, CT scans expose patients to irradiation. I have attempted to place ultrasonography and CT scanning in their proper roles for jaundiced patients by the algorithm displayed in Figure 1. CT scanning is a second-order test, employed to further evaluate the details of pancreatic, bile duct or hepatic tumors.

The bile ducts should be visualized radiographically once dilatation has been shown by ultrasonography. Percutaneous transhepatic thin-needle cholangiography is the safest, most convenient and in most institutions the cheapest way to accomplish this goal. Endoscopic retrograde cholangiopancreatography is the procedure of choice when a mass has been identified in the head of the pancreas. With this approach, bile can be aspirated for cytologic examination and the papilla of Vater made visible for direct biopsy if a lesion is seen. Radiographs of the pancreatic duct may show the typical changes of pancreatic cancer. If the diagnosis is not made by this procedure, a thin-needle cholangiogram and percutaneous aspiration of the mass for cytology examination under CT scan control should be obtained.

I have purposely omitted intravenous cholangiography and radionuclide biliary scans from the algorithm because they appear to be of little value in the presence of obstruction. Visceral angiography is useful in assessing vascular involvement in pancreatic cancer and should be done in all patients who may undergo a radical pancreaticoduodenectomy. Peritoneoscopy is also of help when a direct biopsy of a hepatic lesion is required. Blind percutaneous liver biopsy is rarely needed in patients with biliary obstruction but may be of value when significant hepatocellular damage is suspected.

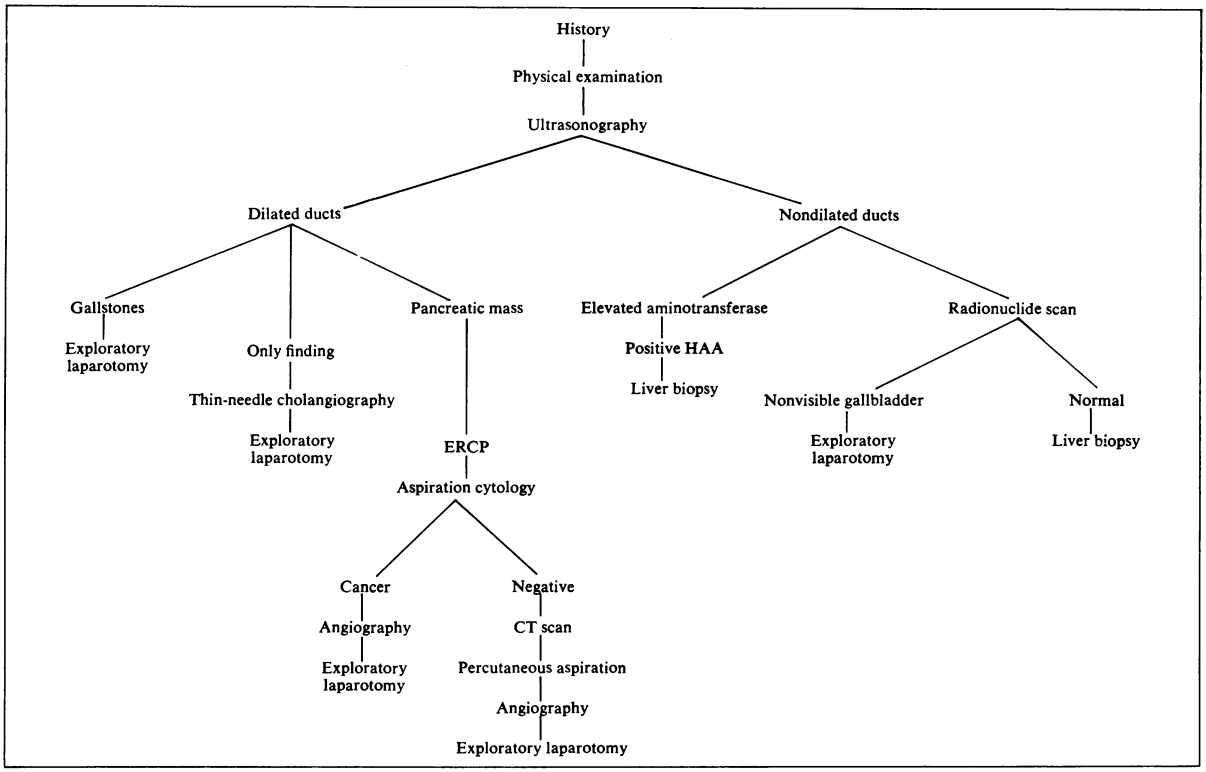

Figure 1.—Algorithm for the diagnosis of jaundice. CT = computerized tomography; ERCP = endoscopic retrograde cholangiopancreatography; HAA = hepatitis-associated antigen.

The treatment of biliary obstruction in the recent past was exclusively surgical. Today the bile ducts are easily entered from above by a radiologist and from below by an endoscopist. A variety of percutaneous and transendoscopic techniques have emerged to overcome the problem of biliary obstruction. It will not come as a surprise to you that as a surgeon I prefer the transabdominal approach for relief of obstruction. Evacuation of stones through a choledochotomy or relief of neoplastic or benign obstruction by resection or biliary-enteric bypass is my stock in trade. An exception to this preference is the percutaneous transhepatic intubation of highly obstructing neoplasms (Klatskin tumors) at or above the bile ducts in elderly patients. I also advocate the transpapillary extraction of reformed or retained stones via an endoscope in high risk surgical patients. Both of these procedures require a skilled radiologist and endoscopist. The direct surgical approach, however, is not only acceptable but likely the best approach in most cases, especially when the risk of exploratory laparotomy is not a significant factor. Further improvement in the transhepatic and endoscopic procedures will present an attractive alternative to the transabdominal route in view of their convenience, low cost and safety.

You will note that the algorithm in Figure 1 ends with exploration for all cases in which dilated ducts are observed on ultrasound studies. Then why not interpose this step between the other diagnostic steps, thus reducing the time, risk and expense involved in doing them? I believe that each step helps to improve intraoperative therapy. For example, perioperative cholangiography by either the transhepatic or endoscopic route usually identifies the level of obstruction and often its cause. Cytologic examination of percutaneous or aspiration specimens may provide a specific diagnosis, when positive, and angiography may reveal signs of vascular invasion that would preclude resection of a pancreatic mass. The operative therapy of obstructive jaundice is enhanced by having a specific diagnosis and radiographic visibility of the bile ducts before exploration.

White has considered in exquisite detail the intraoperative steps for treating the various lesions that might be encountered. I find myself in agreement with his emphasis on perioperative cholangiography in stone disease, judicious use of the choledochoscope, biliary manometry when it is

available and resection of bile duct and periampullary tumors when possible. I also concur with his advocacy of resection of choledochal cysts with Roux-en-Y jejunal reconstruction. His use of choledochoduodenostomy following secondary operations for common duct stones when the duct is dilated is also sound. I do not intend to comment on the specific therapies employed for the treatment of biliary obstruction. White's article is a comprehensive review of an important topic. The purpose of this brief editorial has been simply to highlight the use of the newer technologies of radiographic imaging to allow for accurate diagnosis and therefore early relief of biliary obstruction.

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Holism: Naissance or Renaissance?

THESE ARE fascinating times for medicine and for the medical profession. So much is happening so quickly that it is sometimes difficult to keep a perspective, or to know when to stand firm or when to try to understand and accept change. Elsewhere in this issue is a thoughtful special essay by James S. Gordon on the phenomenon now being called holistic medicine, with a sensitive discussion of its contributions and shortcomings. A growing interest in holistic medicine is one of the things that is currently happening, and so far it is receiving a mixed reception from practicing physicians. A practicing physician's attitude toward it may depend to some extent on how long ago he or she was trained and on the nature and depth of his or her personal practice experience. Many physicians will say this is nothing new, it is what they have been doing all their lives, only it was never called holistic medicine. They may add that it is too bad it is now becoming a well-publicized and well-financed focus for charlatans, quacks and anti-intellectuals to prey upon sick or unwitting persons. Others, more the products of intensive subspecialty training acquired during the years of extraordinarily productive and successful reductionist biomedical science, may tend to view it more as destructive antiscience and irrelevant if not actually harmful to good scientific patient care. But that generation is now being followed by another which in their attitudes are more like holistic "lumpers" than reductionist "splitters," and who see holistic medicine more as a conceptual framework for a more all-encompassing approach to illness and health which may add important new dimensions to doing better and feeling better for both doctors and patients.

It seems that a number of things may have been happening to bring about either a naissance or renaissance of holism in the concept and practice of medicine at this time. As Gordon points out in his essay, the burden of illness has shifted from acute infectious to chronic often stress-related diseases which often require multiple scientific and nonscientific modalities for their successful treatment. The sheer cost of modern scientific medicine has created a new interest in the possibilities for prevention of illness and injury. And the world in which people live, and become ill or stay healthy, is becoming ever more interdependent—technologically, socially, economically and even politically—with all that this implies for health care. Also there is a beginning perceptible shift away from the collective egalitarianism of the recent past toward an increased understanding of each person as a distinct and unique individual with a personal human potential to be fulfilled. These and no doubt many other forces are leading to a more holistic or even global perspective on the interactions of a whole person with his or her total environment—in illness, health and personal quality of life. With all of this the traditional physician-patient relationship is becoming more of a partnership, with the doctor's role as treater now becoming leavened with more emphasis on the even more traditional role of teacher.

Dr. Gordon has performed a service with the clarity of perception in his special essay. In many ways the more things change the more they stay the same, but somehow they always seem to get more complicated and the sameness develops new dimensions and new interrelationships. For younger physicians holism in medical practice offers the excitement of something new, an attitude or perspective much needed in a marvelous era of productive reductionist medical science. And for many older physicians the new emphasis on holism can be a comforting reaffirmation of what medicine and patient care have always been all about. These are indeed fascinating times for medicine and for the medical profession, as new perspectives and new dimensions are added to what has always been and always will be the same. —MSMW